



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

OMG AMERICAS

Franklin, Pennsylvania

EPA ID NO. PAD014130439

Prepared by
Office of Pennsylvania Remediation
Land and Chemicals Division
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Section 1: Introduction

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the OMG Americas, Inc. (OMG) facility located at 2 Mile Run Road, Franklin, Pennsylvania 16323 (Facility), which is subject to EPA's Corrective Action (CA) program under the Solid Waste Disposal Act, as amended, commonly referred to as the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 et seq. EPA has prepared this SB to describe the background and basis for the proposed remedy.

EPA is providing a 30-day public comment period on this SB and may modify its proposed remedy based on comments received during this period. EPA will announce its selection of a final remedy for the Facility in a Final Decision and Response to Comments (Final Decision) after the comment period has ended.

Information on the Corrective Action program, a fact sheet, and the Government Performance and Results Act Environmental Indicator Determinations for the Facility can be found by navigating <http://www.epa.gov/reg3wcmd/correctiveaction.htm>.

The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which EPA's proposed remedy is based. See Section VIII, Public Participation, for information on how you may review the AR.

Section 2: Facility Background

The Facility was originally owned and operated by Mobil Oil Corporation beginning in the 1920s. The Facility was bought from Mobil Oil Corporation by Mooney Chemicals, Inc. (Mooney) in 1964. OMG purchased the Facility from Mooney in 1991 and is the current owner and operator.

The Facility property consists of approximately 55 acres and is located in a rural setting. The Facility is situated in a narrow valley between two perennial streams, Two Mile Run Creek to the east and Race Run Creek to the west. The Facility is further surrounded by vacant woodlands to the east, west, and north; a residence topographically upgradient and north; State Route 8 and the Allegheny River to the south; and commercial properties to the southwest across State Route 8.

Mobil Oil manufactured block greases and lubricants at the Facility. OMG, and formerly Mooney Chemicals Inc., have manufactured industrial chemicals known as metal carboxylates since 1964, inorganic cobalt salts since 1985, and non-cadmium type PVC stabilizers since 1998.

Section 3: Summary of Environmental Investigations

3.1 Environmental Investigations and Remedial Activities

In July 1991, EPA performed a Preliminary Assessment (PA) at the Facility. In December 1991, OMG performed a site inspection in connection with a proposed property transaction. The PA report indicated that from 1964 to 1980, spent filter cake was deposited in a waste pile that sat directly on the ground in the northeast corner of the Facility. This area is referred to as the Former Spent Filter Cake Disposal Area. The site inspection results presented in the December 1991 Report of Findings identified Volatile Organic Compound (VOC) and Semi-volatile Organic Compound (SVOC) in soil and groundwater and Light Non-Aqueous Phase Liquid (LNAPL) in 3 wells in the area surrounding an aboveground storage tank (AST) farm. This area is referred to as the Mineral Spirits Release Area.

Former Spent Filter Cake Disposal Area

In 1981, Mooney removed 385 tons of filter cake and contaminated soil from the Former Spent Filter Cake Disposal Area for offsite disposal. Thereafter the Facility's storage practice changed to the use of roll-off boxes. The area was also covered with asphalt. No soil samples were taken at the time of removal. However, in January 1993, the Facility collected soil samples and installed monitoring wells to evaluate the extent of lead contamination in the Former Spent Filter Cake Disposal

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Area. The findings, presented in a Report of Findings dated December 1993, showed residual lead contamination in soil up to 79,000 milligrams per kilogram (mg/kg). However lead concentrations (maximum 0.17 mg/L) in groundwater were below the PADEP nonresidential non-use aquifer drinking water standard (5 mg/L) but exceeded the nonresidential used aquifer standard (0.005 mg/L).

Remedial options were evaluated by OMG as part of the 1993 Report of Findings. Soil Containment, Soil and Groundwater Containment, Stabilization and Offsite Disposal, In-situ Stabilization, Excavation and Offsite Disposal, and In-situ Treatment were all evaluated. Soil Containment was selected by OMG as the remedial alternative for its effectiveness of being protective of human health and the environment with a low capital cost. In 1996, a retaining wall was constructed along Two Mile Run and a new asphalt cap was installed over the lead-impacted soil area. The contaminated area encompasses approximately 31,000 square feet by 8 feet deep (9,200 cubic yards).

Mineral Spirits Release Area

The December 1991 Report of Findings identified VOC and SVOC soil and groundwater contamination and LNAPL ranging from 0.45 to 1.7 feet in 3 wells in the area surrounding an AST farm. Tables 1a-1b (attached) summarize the VOCs and SVOCs and identifies their respective concentration levels. The Facility determined that the LNAPL was caused by a leaking underground transfer line. As a result, the Facility performed an investigation to assess the extent of contamination and produce a conceptual design for a groundwater recovery system.

In 1992, the Facility installed a 400 linear feet recovery trench to address the LNAPL, soil and groundwater contamination in the Mineral Spirits Release Area. It began operating in 1994 and recovered 200 to 300 gallons but had several problems and two vertical recovery wells were installed for support. This system operated through 1997 and recovered an additional 180 gallons of LNAPL. Due to remedial efforts reducing LNAPL thickness to a maximum of 0.12 feet and after an additional 114 gallons were recovered, the system was determined to have reached maximum efficiency and ceased operating in late 1997. Groundwater monitoring and recovery by hand bailing continued to be performed as needed until approximately 2004. Throughout monitoring, LNAPL was observed to be localized and not migrating.

Facility-wide

On March 28, 2000, the Facility submitted a Notice of Intent to Remediate (NIR) enrolling in the Pennsylvania Department of Environmental Protection (PADEP) Land Recycling and Environmental Remediation Standards Act (Act 2) program. The Former Spent Filter Cake Disposal Area and the Mineral Spirits Release Area were determined to be the Areas of Concern (AOCs) that needed to be addressed

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under the CA Program. EPA and PADEP agreed that these AOCs could be addressed by the Facility using a single, combined Act 2 and CA scope of work. On November 6, 2000, the Facility submitted an Act 2 Work Plan to EPA and PADEP to characterize the nature and extent of soil and groundwater contamination at the overall Facility.

In 2003, indoor air samples were collected from the basements of select buildings at the Facility and screened against Occupational Safety & Health Administration (OSHA) Permissible Exposure Limits (PELs). Results were below the PELs established by OSHA as acceptable levels for workers exposed to chemicals in an industrial setting.

A Remedial Investigation Report (RIR) was submitted to EPA and PADEP in March 2004 presenting soil, groundwater, surface water, and sediment samples taken during June and August 2002. Results shown in Tables 2a-2e summarize the exceedances of benzene, ethylbenzene, and lead above their surface soil Medium-Specific Concentrations (MSCs); benzo(a)pyrene, antimony, arsenic, barium, cadmium, cobalt, copper, lead, nickel, silver, and thallium above their subsurface soil MSCs; benzene, naphthalene, arsenic, barium, lead, nickel, and silver above their used aquifer groundwater MSCs; silver above its surface water standard; and pyrene, cobalt, lead, and thallium in sediment above PADEP's saturated soil MSCs. Based on the findings, a human health and ecological risk assessment was prepared to evaluate current and future risks.

3.1.4 Human Health Risk Assessment and Evaluation of Exposure Pathways

A Human Health and Ecological Risk Assessment (HHERA) was first submitted on January 16, 2006 with revised reports being submitted on August 17, 2007, June 9, 2008, and October 2, 2008. In accordance with PADEP comments and EPA guidance, the updated HHERAs determined the current and future use to be industrial. The soil, groundwater, and indoor air RIR data were accordingly screened against the non-residential MSCs, EPA Region III Risk-Based Standards (now Regional Screening Levels [RSLs]), and an EPA Adult Lead Model (ALM) site-specific standard.

Sediment results from the RIR were screened against residential soil direct contact MSCs and no samples were in exceedance. Therefore, it was determined that no further evaluation of sediment was necessary.

The *Pennsylvania Single Discharge Wasteload Allocation Computer Program for Toxic Substances* (PENTOXSD) was used to calculate surface water concentrations using groundwater contaminants of concern (COC) concentration data. The result of the PENTOXSD combined with previous surface water samples indicate that surface water concentrations for the identified COCs were below PADEP's Chapter 16 *Water Quality Criteria for Toxic Substances* (25 § 16.102) and EPA's National Recommended Water Quality Criteria for both human health and aquatic life. Statement of Basis

Therefore, further surface water analysis was unnecessary.

The indoor air samples collected from the basements of select buildings in 2003 were below OSHA PELs established as acceptable levels for workers exposed to chemicals in an industrial setting. Therefore, under industrial use, indoor air was not a pathway of concern and further analysis was deemed unnecessary.

COCs identified as a result of the HHERA screening were lead, ethylbenzene, and total xylenes in soil; and acetone, benzene, methylene chloride, naphthalene, aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, silver, and thallium in groundwater.

The HHERA evaluated the COCs and concluded that the only potential receptors for unacceptable exposures were construction workers not wearing Personal Protective Equipment (PPE). They could be at risk from inhalation, incidental ingestion, and dermal exposure to contaminated soil and groundwater during excavation activities. This evaluation is based on the assumptions made in the HHERA that there is no groundwater use, contaminated soils are covered by impermeable surfaces, and the Facility use remains industrial. The HHERA was approved by PADEP on January 8, 2009.

3.1.5 Groundwater Monitoring

From 1991 to 2012, groundwater monitoring was performed throughout the investigations and cleanup procedures. Groundwater monitoring data associated with both the Former Spent Filter Cake Disposal Area and the Mineral Spirits Release Area have indicated that releases from these areas have caused residual localized VOCs, SVOCs, metals, and LNAPL impacts to groundwater. Groundwater monitoring results from monitoring wells installed during the RIR investigation demonstrate that these impacts have not migrated beyond the immediate area where the releases occurred, have not resulted in any discernible groundwater contaminant plumes, and have not impacted Race Run or Two Mile Run Creek.

On January 23, 2012, PADEP approved an Attainment Sampling Plan for groundwater submitted by OMG. During 2012, OMG conducted groundwater monitoring attainment sampling for four consecutive quarters and analyzed the samples for VOCs, PAHs, and dissolved metals. On May 7, 2013, PADEP approved a Request to Cease Groundwater Monitoring submitted by OMG which reported the sampling results from the Attainment Sampling Plan 2012 sampling events. The results, as shown in Table 3 (attached), show that COCs identified at concentrations above their respective MCLs or MSCs in the AOC areas were not identified at the Facility boundary. This data in conjunction with the RIR data indicate that COCs are not migrating offsite. One exception noted was arsenic which was detected at concentrations exceeding its National Primary Drinking Water Standard Maximum Contaminant Levels (MCLs) promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and Statement of Basis

codified at 40 CFR Part 141. Arsenic was included in the list of COCs but after further evaluation arsenic appeared to be consistent in soil and groundwater across the Facility as reported in the RIR and was identified in upgradient background samples as reported in the Report of Findings. Therefore, EPA determined that arsenic is naturally occurring in the vicinity of the Facility.

3.1.6 Act 2 Final Report

The Act 2 Final Report dated May 1, 2014 was submitted to EPA and PADEP on May 13, 2014. The Act 2 Final Report summarized the activities described in the sections above and included proposed land and groundwater use restrictions, a requirement for a Health and Safety Plan, and a Soil Management Plan to eliminate unacceptable exposures to residual contaminants at the Facility. The Act 2 Final Report was approved by PADEP on July 30, 2014. EPA has reviewed and concurs with the conclusions and recommendations in the PADEP-approved Act 2 Final Report.

PADEP approval of the Final Report required an Environmental Covenant pursuant to the Pennsylvania Uniform Environmental Covenants Act, 27 Pa. C.S. Sections 6501-6517, (UECA) to be recorded with the deed for the Facility. On September 19, 2014, OMG recorded an Environmental Covenant on the deed to the Facility with the following requirements and land and groundwater use restrictions:

- a. The Facility shall only be used as “Non-Residential Property” as that term is defined in Act 2.
- b. Groundwater at and under the Facility shall not be used for any purpose unless written approval is obtained from the Department [of Environmental Protection] and adequate treatment is provided.
- c. Excavation in the AOCs is prohibited except as is necessary for installation of Facility improvements.
- d. Adherence to the Soil Management Plan is required during excavation activities within the AOCs.
- e. As stated in the Soil Management Plan, a Health and Safety Plan (“HASp”) must be implemented for construction workers during excavation in the AOCs. Excavation and materials handling activities will comply with applicable federal, state, and local requirements.
- f. The pavement and building slabs serving as capping for the AOCs shall be inspected annually and any damage to these caps will be repaired within 30 days of being observed.

3.2 EPA Assessment

The investigations discussed in the previous sections were completed pursuant

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to PADEP's Act 2 Program. Soil and groundwater sampling results obtained during those investigations were initially compared to Act 2 Statewide Health Standards (SHSs) and MSCs. The SHSs for soil are equivalent to EPA's RSLs for the individual soil COCs at the Facility. The SHSs for groundwater are equivalent to EPA's MCLs for the individual groundwater COCs at the Facility.

Based upon the Act 2 RIR investigation and conclusions, EPA has determined that there are no Facility-wide impacts to soil or groundwater. Localized impacts have occurred in the Former Spent Filter Cake Disposal Area and the Mineral Spirits Release Area. The Former Spent Filter Cake Disposal Area soil is contaminated by lead, barium, cobalt, copper, nickel, silver, thallium, and benzo(a)pyrene, as shown in Table 2c but has been capped which eliminates direct contact exposures and has stopped water infiltration in turn reducing the migration of contaminants to groundwater. The Mineral Spirits Release Area does not have any soil contamination, but groundwater sampling from this area has revealed concentrations of benzene and naphthalene above their respective MCL and SHS as shown in Table 2a. As stated above, PADEP and EPA has determined that these impacts are localized, not migrating, and not identified at the Facility boundary.

The Facility conducted a human health and ecological risk assessment in accordance with EPA guidance and with COCs being screened against EPA Region 3 RSLs. Site specific information was taken into account in the HHERA and only risks identified were those to construction workers not wearing PPE which are easily manageable with the land and groundwater use restrictions. EPA has reviewed this data and concurs with the conclusions and recommendations contained in the HHERAs.

EPA did not screen the groundwater concentrations against the MCLs because the aquifer is not a current or potential source of drinking water. EPA has determined that this aquifer a potential source of drinking water because the observed depth to groundwater is between 1.5 and 5 feet below the ground surface and background levels of arsenic have been observed to be above MCLs resulting in an extremely shallow and naturally degraded aquifer unsuitable for human consumption. Furthermore, groundwater is not used at the Facility for drinking water. In addition, based upon information obtained by the Facility during the RIR from the local water company, there are no downgradient users of off-site groundwater.

Section 4: Corrective Action Objectives

EPA's Corrective Action Objectives for the specific environmental media at
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the Facility are the following:

1. Groundwater

EPA expects final remedies to return usable groundwater to its maximum beneficial use within a timeframe that is reasonable given the particular circumstances of the project. For projects where aquifers are either currently used for water supply or have the potential to be used for water supply, EPA will use the National Primary Drinking Water Standard Maximum Contaminant Levels (MCLs) promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 CFR Part 141.

The shallow aquifer at the Facility is not suitable for drinking purposes so that the aquifer is not current source or a potential future source of drinking water. Therefore, EPA has determined that the site-specific cleanup levels achieved and evaluated in the HHERA for groundwater are protective of human health and the environment for individual contaminants at this Facility provided that consumptive uses of groundwater are prohibited. As such, EPA's Corrective Action Objective for Facility groundwater is to attain the site-specific cleanup levels achieved as shown in Table 2a-2e and control exposure to the hazardous constituents remaining in the groundwater by requiring compliance with and maintenance of groundwater use restrictions at the Facility.

Therefore, EPA's Corrective Action Objectives for groundwater are:

- a. Attain site-specific cleanup levels detailed in Tables 2a-2e;
- b. Prevent potential inhalation, ingestion and dermal exposure to contaminants during excavation activities in the Former Spent Filter Cake Disposal and Mineral Spirits Release Areas; and
- c. Prevent human exposure to the degraded aquifer unsuitable for drinking water.

2. Soil

PADEP's Statewide Health Standards (SHSs) for non-residential usage meet or are more conservative than EPA's acceptable risk range for non-residential usage. Therefore, EPA has determined that PADEP's SHSs for non-residential usage and the EPA ALM site-specific standard for Lead are protective of human health and the environment for individual contaminants at the Facility provided that the Facility is not used for residential purposes.

Therefore, EPA's Corrective Action Objectives for Facility soils are:

- a. Attain applicable SHSs for non-residential usage and EPA's ALM site-specific standard for Lead;

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- b. Eliminate the exposure to the lead impacted soil by maintaining the containment cap over the Former Spent Filter Cake Disposal Area;
- c. Mitigate unacceptable potential future risk from exposure during intrusive activities by construction workers in the Former Spent Filter Cake Disposal and Mineral Spirits Release Areas; and
- d. Prohibit future residential use based on risk based cleanup levels achieved and current and future use risk exposure assumptions.

Section 5: Proposed Remedy

EPA's proposed remedy is to require the Facility to 1) comply with the requirements of and 2) maintain the land and groundwater use restrictions in the September 19, 2014 Environmental Covenant.

Section 6: Evaluation of Proposed Remedy

This section provides a description of the criteria EPA used to evaluate the proposed remedy consistent with EPA guidance. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria.

Threshold Criteria	Evaluation
1) Protect human health and the environment	EPA's proposed remedy is protective of human health and the environment. The HHERA evaluated all exposures to human health and the environment and found that the only potential receptors for unacceptable exposures are construction workers. EPA's proposed remedy for the Facility protects this potentially open pathway through the adherence to the requirements and land and groundwater use restrictions implemented through the September 19, 2014 Environmental Covenant at the Facility.
2) Achieve media cleanup objectives	EPA's proposed remedy meets the media cleanup objectives based on the current and future anticipated land use at the Facility as non-residential. The groundwater is unsuitable as a drinking water and site specific cleanup objectives were met.
3) Remediating the Source of Releases	With all proposed remedies, EPA seeks to eliminate or reduce further releases of hazardous wastes and hazardous constituents that may pose a threat to human health and the environment. The actions already taken at the Facility met this objective. The sources in the AOCs have been excavated and remediated to the maximum extent practicable. In addition, the contaminated soil remaining in place at the facility has been capped thereby reducing the source of infiltration to groundwater.

Section 6: Evaluation of Proposed Remedy (continued)

Balancing Criteria	Evaluation
4) Long-term effectiveness	Groundwater is not used at the Facility for drinking water and no downgradient users of off-site groundwater exist. Therefore, the long term effectiveness of the remedy for the Facility will be maintained by the implementation of land and groundwater use controls.
5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	The reduction of mobility and volume of hazardous constituents has already been achieved as demonstrated by the soil removal, soil capping and groundwater remediation, and data from the groundwater monitoring.
6) Short-term effectiveness	EPA's proposed remedy is effective in the short-term. It does not involve any activities, such as construction or excavation that would pose short-term risks to workers, residents, and the environment. The land and groundwater use restrictions have already been implemented.
7) Implementability	EPA's proposed remedy requires continued compliance with the remedy that has already been implemented by PADEP.
8) Cost	An Environmental Covenant has already been recorded in the chain of title of the deed to the Facility property. The costs associated with this proposed remedy including the maintenance of the pavement and building slabs are minimal (estimated cost of less than \$10,000 per year). Therefore, EPA's proposed remedy is cost effective.
9) Community Acceptance	EPA will evaluate Community acceptance of the proposed remedy during the public comment period and respond to Community comments in the Final Decision and Response to Comments.
10) State/Support Agency Acceptance	PA was the lead agency for the remediation at this Facility with EPA input under the One Cleanup Program. PADEP has reviewed and approved the Final Report, Environmental Covenant, and associated remedial activities and use restrictions for the Facility. EPA anticipates State acceptance of the proposed remedy and will evaluate and will respond to State comments in the Final Decision and Response to Comments.

Section 7: Financial Assurance

EPA has evaluated whether financial assurance for corrective action is necessary to implement EPA's proposed remedy at the Facility. Given that EPA's proposed remedy does not require any further actions to remediate soil or groundwater, given that the costs of implementing land and groundwater use restrictions at the Facility has already been incurred, and the maintenance costs of the pavement and building slabs are minimal, EPA is proposing that no financial assurance be required.

Section 8: Public Participation

Interested persons are invited to comment on EPA's proposed remedy. The public comment period will last thirty calendar days from the date that notice is published in a local newspaper. Comments may be submitted by mail, fax, e-mail, or phone to Mr. Kevin Bilash at the address listed below.

A public meeting will be held upon request. Requests for a public meeting should be made to Mr. Kevin Bilash at the address listed below. A meeting will not be scheduled unless one is requested.

The Administrative Record contains all the information considered by EPA for the proposed remedy at this Facility. The Administrative Record is available at the following location:

U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
Contact: Kevin Bilash (3LC30)
Phone: (215) 814-2796
Fax: (215) 814 - 3113
Email: bilash.kevin@epa.gov

Section 9: Signature

Date: _____

John A. Armstead, Director
Land and Chemicals Division
US EPA, Region III

Attachments:

Figure 1: Map of OMG Facility
Tables 1a-1b
Tables 2a-2e
Table 3

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Environmental Priorities Initiative Site Inspection of Mooney Chemicals, Incorporated,
NUS Corporation – July 26, 1991
Report of Findings, CEC Inc. - December 9, 1991
Report of Findings, CEC, Inc. - December, 1993
Groundwater Remediation System Report, CEC Inc. - June 26, 1997
Act 2 Work Plan, CEC Inc. – November 6, 2000
Environmental Indicator Inspection Report, USACE – April 2001
Human Health and Ecological Risk Assessment, CEC Inc. - January 16, 2006 (revised
August 17, 2007; June 9, 2008, and October 2, 2008)
Request to Cease Groundwater Monitoring, CEC Inc. – March 4, 2013
Cleanup Plan, CEC Inc. – December 12, 2013
Act 2 Final Report, CEC Inc. - May 1, 2014
Addendum – Act 2 Final Report – July 23, 2014
Environmental Covenant - recorded September 19, 2014

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Figure 1

Map of OMG Facility With Areas of Concern



Green = Former Spent Filter Cake Area
Yellow = Mineral Spirits Release Area

Tables

Table 1a

Summary of Groundwater results – 1991

Volatile Organic Compound (ug/L)	Max Concentration	USEPA Regional Screening Level (current)	PADEP Act 2 Nonresidential Used Aquifer MSC (current)
Methylene Chloride	18	5	5
1,2-dichloroethene	24	70	70
Acetone	310	12000	92000
Benzene	51	5	5
Toluene	13	100	1000
Chlorobenzene	85	100	100

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Xylenes	840	10000	10000
Semi-Volatile Organic Compound (ug/L)			
Naphthalene	380	180	100
2-Methylnaphthalene	510	4100	410

Table 1b

Summary of Soil results – 1991

Volatile Organic Compound (mg/kg)	Max Concentration	USEPA Regional Screening Level – Industrial Soil (current)	PADEP Act 2 Nonresidential Soil MSC (current)
Acetone	0.280	630000	10000
Xylenes	150	2700	8000
Total Petroleum Hydrocarbons	11000	N/A	500*

* PADEP formerly used this value to indicate contamination. Not used currently.

Table 2a

Summary of Groundwater results – 1993/2002

Volatile Organic Compound (ug/L)	Max Concentration	USEPA Regional Screening Level	PADEP Act 2 Nonresidential Used Aquifer MSC
Benzene	20.3	5	5
Semi-Volatile Organic Compound (ug/L)			
Naphthalene	365	180	100
Metals (ug/L)			
Arsenic	57.6	10	50
Barium	3110	2000	2000

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Lead	15.6	15	5
Nickel	701	300	100
Silver	139	71	100

Table 2b

Summary of Surface Soil results – 1993/2002

Volatile Organic Compound (mg/kg)	Max Concentration	USEPA Regional Screening Level – Industrial Soil	PADEP Act 2 Nonresidential Soil to Groundwater MSC
Benzene	138	5.4	0.5
Ethylbenzene	126	27	70
Metals (mg/kg)			
Lead	11000	800	450

Table 2c

Summary of Subsurface Soil results – 1993/2002

Volatile Organic Compound (mg/kg)	Max Concentration	USEPA Regional Screening Level – Industrial Soil	PADEP Act 2 Nonresidential Soil to Groundwater MSC
Benzo(a)pyrene	13	0.21	4.6
Metals (mg/kg)			
Antimony	6.3	410	2.7
Arsenic	74	10	15
Barium	1000	190000	820
Cadmium	20	800	3.8
Cobalt	1800	300	200
Copper	8100	41000	3600
Lead	79000	800	45
Nickel	270	20000	65
Silver	41	5100	10
Thallium	5.57	10	1.4

Table 2d

Summary of Surface Water results – 2002

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Metals (mg/kg)	Max Concentration	USEPA National Ambient Water Quality Criteria	PADEP Water Quality Criteria
Silver	30.4	3.2	3.5

Table 2e

Summary of Sediment results – 2002

Semi-Volatile Organic Compound (ug/L)	Max Concentration	USEPA Regional Sediment Screening Level	PADEP Act 2 Saturated Soil MSC
Pyrene	918	NA	220
Metals (mg/kg)			
Cobalt	43	NA	20
Lead	63.9	NA	45
Thallium	4.24	NA	1.4

Table 3

Summary of Groundwater Attainment monitoring results – 2012


Date Sampled:	MW-8 3/8/2012	MW-8 6/18/2012	MW-8 9/24/2012	MW-8 12/11/2012	MSC ⁽¹⁾
Volatile Organic Compounds, ug/l⁽²⁾					
Acetone	11.8	<10	<10	<10	92,000
Methylene Chloride	<1	<1	<1	1.1	5
Polynuclear Aromatic Hydrocarbons, ug/l					
Acenaphthene	<0.11	<0.10	<0.10	<0.10	3,800
Acenaphthylene	<0.11	<0.10	<0.10	<0.10	6,100
Anthracene	<0.11	<0.10	<0.10	<0.10	66
Benzo(a)anthracene	<0.11	<0.10	<0.10	<0.10	3.6
Benzo(a)pyrene	0.11	<0.10	<0.10	<0.10	0.2
Benzo(b)fluoranthene	0.50	<0.10	<0.10	0.44	1.2
Benzo(ghi)perylene	0.14	<0.10	<0.10	<0.10	0.26
Benzo(k)fluoranthene	<0.11	<0.10	<0.10	<0.10	0.55
Chrysene	0.16	<0.10	<0.10	<0.10	1.9
Dibenz(a,h.)anthracene	0.19	<0.10	<0.10	<0.10	0.36
Fluoranthene	0.27	<0.10	<0.10	<0.10	260
Fluorene	<0.11	<0.10	<0.10	<0.10	1,900
Indeno(1,2,3-cd)pyrene	0.22	<0.10	<0.10	<0.10	3.6
Naphthalene	0.30	<0.10	<0.10	<0.10	100
Phenanthrene	0.16	<0.10	<0.10	<0.10	1,100
Pyrene	0.24	<0.10	<0.10	<0.10	130
Dissolved PP Metals, mg/l					
Antimony	<0.0060	<0.0060	<0.0060	<0.0060	0.006
Arsenic	0.0070	0.0224	0.0323	0.0055	0.01
Beryllium	<0.0010	<0.0010	<0.0010	<0.0010	0.004
Cadmium	<0.0030	<0.0030	<0.0030	<0.0030	0.005
Chromium	<0.0050	<0.0050	<0.0050	<0.0050	0.1
Copper	<0.0050	<0.0050	<0.0050	<0.0050	1.0
Lead	<0.0050	<0.0050	<0.0050	<0.0050	0.005
Mercury	<0.00020	<0.00020	<0.00020	0.0002	0.002
Nickel	<0.0100	<0.0100	<0.0100	<0.0100	0.1
Selenium	<0.0080	<0.0080	<0.0080	<0.0080	0.05
Silver	<0.0060	<0.0060	<0.0060	<0.0060	0.1
Thallium	<0.0100	<0.0100	<0.0100	<0.0100	0.002
Zinc	0.0131	<0.0100	<0.0100	0.0239	2
FIELD ANALYSES					
Depth to Water (feet TOC)	1.62	3.6	3.55	2.95	
pH	7.59	8.01	6.60	6.36	
Specific Conductance, umhos/cm	822	8,798	8,532	2,590	
Oxidation Reduction Potential, mV	-26	-90	0.77	-16	
Temperature, °C	11.1	23.3	17.7	9.1	

(1) Non-Residential Used Aquifer Medium Specific Concentration, 2011

(2) Samples were analyzed for the Target Compound List VOCs. Only compounds detected in groundwater are listed here.

ND indicates Not Detected ; NA indicates Not Analyzed; NS indicates No Standard

BOLD indicated Identified above the detection limit

 Indicates detected above the standard